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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/171,960	10/29/1998	ROBERT D SPINDLEY	36-1287	8693
23117	7590	12/11/2003	EXAMINER	
NIXON & VANDERHYE, PC 1100 N GLEBE ROAD 8TH FLOOR ARLINGTON, VA 22201-4714			FERRIS, DERRICK W	
		ART UNIT		PAPER NUMBER
		2663		18
DATE MAILED: 12/11/2003				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/171,960	SPINDLEY ET AL.	
	Examiner	Art Unit	
	Derrick W. Ferris	2663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 21 November 2003.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-17 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 1-17 is/are rejected.

7) Claim(s) _____ is/are objected to.

8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on 05 September 2002 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) All b) Some * c) None of:
1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) The translation of the foreign language provisional application has been received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ .
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____. .	6) <input type="checkbox"/> Other: _____ .

DETAILED ACTION

Response to Amendment

1. **Claims 1-17** as amended are still in consideration for this application. Applicant has amended claims 1, 2, 5, 8, 9, and 13-15.
2. Examiner **withdraws** the 112-first paragraph rejection for Office action filed 05/23/03 since applicant amended the claims.
3. Examiner does **not withdraw** the 112-second paragraph rejection for Office action filed 05/23/03. Applicant did not address or correct claim 16 with respect to “impermissible” and “permissible” values. Examiner thanks applicant for making corrections to the other claims previously rejected under 112-second paragraph.
4. Examiner does **not withdraw** the obviousness rejection to *Clarke et al.* in view of *Weisser* for Office action filed 05/23/03. From the examiner’s perspective there are items at issue.

The first issue is what is meant by the term “control field” as recited in the claims. In particular, the scope of “control field” is not clearly defined by the claims. By way of example, claim 1 recites that a “control field” takes one of a plurality of possible values (e.g., see step a) but still does not define a “control field”. Applicant does further define a “control field” in claim 4 and 10 were the rejection is withdrawn. Applicant’s specification states that preferably the control field is a routing control field (i.e., “point codes”) (e.g., see page 3, lines 3-8), however, applicant’s specification then goes on to state that “the invention is by no means limited to use with routing control fields”. Specifically, applicant’s specification also mentions overwriting a code which identifies the “originating network for a signal” (e.g., such a signal could be data

related signaling network management and maintenance). Examiner notes that an “originating network for a signal” is open-ended and thus assumes a reasonable but broad interpretation of the recited claimed subject matter. As such, in reference to applicant’s remarks filed 11/21/2003 (e.g., see pages 15-17 of applicant’s remarks) the passage cited by the applicant (column 13, lines 30-52 of *Clark et al.*) does teach that MSU data related to higher levels (which is not clearly defined) is handled by the User level (i.e., passed up to the interception functionality), however, also taught by the reference is that other information is still handed/updated at layer 3 (i.e., a lower level using a reasonable but broad interpretation or other information found in message/data field 41). Thus the reference teaches that “control information”, using a reasonable but broad interpretation of the term, is modified at a lower level (i.e., layer 3). In particular, see column 8, lines 13-56; and column 10, lines 35-58. Hence applicant’s argument that a “control field” only contain points codes (i.e., information that relates to higher layers) is improper since the term point codes (or equivalent) is not recited in the claims. Furthermore, applicant argues that modification only takes place at a higher level (i.e., a user part) for which the examiner respectfully disagrees (see e.g., column 10, lines 35-56). Specifically *Clark et al.* teaches: “it is possible to arrange for the modification circuit to effect different forms of modification on different types of MSU” (see column 10, lines 54-58) where the modification circuit 79 is found at level 3 (see figure 6). The message/data filed 41 is shown in figure 3 which contains MSU information 42 including, but not limited to a routing label 43.

At second issue is what is meant by low level and higher level since these terms are relative. In particular, a low level and/or high level is unclear from some of the claims such that the examiner assumes a reasonable but broad interpretation of the recited claimed subject matter.

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Specifically, examiner assumes that level 3 is a lower layer (as mentioned in the previous rejections). Examiner notes applicant has not amended all the claims to further recite this limitation (e.g., see independent claims 2, 14, and 15).

Should applicant clearly state that control information is point code (i.e., network layer) information and clearly define a lower level and higher level as MTP layer 2 and a user layer, respectively, then the examiner would withdrawn the rejection for the remainder of the claims.

Based on applicant's amendment the examiner has withdrawn the rejection for claims 4, 5, and 10. However, assuming the claims are amended to reflect the changes mentioned above, examiner notes that the new rejection using *Christie et al.* still remains.

Claim Objections

5. **Claim 6** is objected to because of the following informalities: line 1 contains the term "win" which should be "in". Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. **Claim 16** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear what applicant means by "impermissible" values/data as the term "impermissible" is not explicitly defined in applicant's specification. Examiner notes the term "impermissible" is recited in all the independent claims. As the dependent claims depend on the independent claims, these claims also stand rejected. To overcome the rejection, examiner is requesting applicant to provide support for the amended claims by showing where the term

“impermissible” is supported in the specification (i.e., applicant failed to do so when amending the claims in response to the rejection). As such, examiner’s reasonable but broad interpretation of the claimed subject matter includes “not allowable” for the term “impermissible” as defined by the context given on page 7, lines 11-30 of applicant’s specification in view of the description for figure 5 on page 8, lines 1-13. In this section, examiner notes that applicant includes an example of “transfer routing” which includes address translation using a reasonable but broad interpretation.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. **Claims 1-3, 6-9, and 11-17 (as amended)** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,550,914 A to *Clarke et al.* in further view of WO 95/35633 to *Weisser*.

As to **claims 1, 2, 8, 13, 14, and 15**, figure 4 of *Clarke et al.* (“*Clarke*”) shows an operating node (52) (i.e., message interceptor) connected to a single external source (48 or 49) (i.e., signaling transfer point). The operating node (52) receives messages called “signaling units” (40) as shown in Figure 3 that contain a control field and can be handled according to the value(s) in the control field [column 6, lines 30-67; column 7, lines 1-17]. As shown in Figure 5, the message unit (MSU) (52) contains a protocol engine (64,65) for Level 2 protocols (i.e., lower-level of a messaging protocol) and a respective

data extraction circuit (66,67) for extracting Level 3 information from each MSU (or “signaling unit”) received at the interface (60). It is noted that each message interceptor may either act as a message suppression action or a message modification action [column 7, lines 47-49] where it is possible to modify different portions of the MSU (or “signaling unit”) including control fields [column 10, lines 35-59]. Thus it may also be implied that subsequently processing the signal in the network may (or could) be dependent on the control field being overwritten or modified.

Not clearly disclosed by *Clarke* are comparing fields of each incoming message with prestored permissible values and taking corrective action in the event of determining at least one value is permissible at a lower layer. Instead *Clarke* acknowledges that this is usually done at a higher layer (Emphasis column 8, lines 36-56 in reference to *Clarke* figure 7). As additional support, *Weisser* ‘633 describes such a comparison but is silent on where such a comparison takes place (examiner notes that the comparison takes place at the same layer that is being compared by applicant). Thus examiner notes that using a broad but reasonable interpretation of the claims, that *Clarke* does perform overwriting certain fields at the lower layer functions (i.e., level 2 protocol engine) [column 2, lines 35-67; column 3, lines 1-2 with strong emphasis on column 2, lines 64-67]. Thus taught by the summary of *Clarke* is that the comparison takes place somewhere along the way (i.e., included in at least one of said transfer means). Taught specifically in the discloser is that this comparison takes places at layer 3. However, noted in general is that this process takes places as a separate function, prior to the processing of higher layer level processes (such as at the application level). Furthermore, examiner notes applicant’s

definition of a lower layer is layer 3 with respect to a MSU. Thus it would have been obvious to a skilled artisan prior to applicant's invention using a broad interpretation of the claims to perform a comparison at a lower layer process. In addition, not clearly taught by the reference is a method for communicating between two separate networks where one network is an external network, although the background of *Clarke et al.* suggests a motive for using the operating node (52) to communicate between two related but separate network infrastructures [column 1, lines 19-21]. Thus it is determined by the examiner that it would have also been obvious to apply this solution towards an external network due to the above reason. Furthermore, in a separate application that also provides mediation between two control signaling networks, *Weisser* discusses in the abstract a method of mediation of data packet traffic across a particular interface between the Advanced Intelligent Network (AIN) (i.e., communications network) operated by a local exchange carrier and a non-local exchange carrier service provider (i.e., signal source external to the communications network). The *Weisser* reference also points out similar anticipations to the elements described above. Finally, examiner notes that *Clarke* may be silent or deficient to overwriting the control field of a permissible value if the value is determined to be impermissible. Examiner notes that this also would have been obvious prior to applicant's invention given the teachings of *Weisser*. Specifically, *Weisser* discloses masking an originating nodes address such that when communicating with an originating node, the OPC field is overwritten from an "impermissible" value (i.e., the second termination number) to a "permissible" value (i.e., the first or originating number). Examiner notes *Clarke* provides the support in general of modifying (i.e.,

overwriting) an MSU which includes an OPC field based on a match using the data modification circuit 79 [column 10, lines 35-58] where the packet may come from more than one external source (i.e., a third party node).

Since these two references attempt to solve the same problem of control protocol mediation, it would have also been obvious to combine these references so that an external network (as taught by *Weisser*) is used in lieu of a separate network that may or may not be external. Both references disclose signaling in a telecommunications network in general and an SS7 network specifically, thus creating a motivation for combining the subject matter as a whole for both references.

As to **claims 3, 9 and 16**, Clarke et al. teaches a protocol engine (62, 63) that acts generally in the same manner as a standard Level 2 protocol engines for the message transfer point (MTP) [column 7, lines 64-69]. It is also pointed out that the operation of the link portion (62) is maintained at link level (MTP Level 2) by the protocol engine [column 8, lines 23-30] when Level 3 information (i.e., network layer functions) is extracted.

As to **claim 11**, see the same reasoning behind the rejection to claim 10.

As to **claims 6, 7 and 12**, the routing of signals in the reference could be of type SS7 (a common channel signaling protocol) over a point-to-point connection as shown in Figure 4 [column 4, lines 54-60].

As to **claim 17**, see the same reasoning behind the rejection for claim 15.

10. **Claims 1-17 (as amended)** are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,926,482 A to *Christie et al.* ("Christie") in further view of WO 95/35633 to *Weisser*.

As to **claims 1, 2, 8, 13, 14, and 15**, see figures 1 and 2 with respect to structure of a signaling network. In particular, see figure 5 with respect to a point code conversion 500 (i.e., signaling link hardware). Specifically note the difference between the prior art shown in figure 4 and *Christie's* invention shown in figure 5. Examiner places emphasis that "advantageously, the conversion function is located prior to the MTP level 3 route function allowing a single integrated and flexible system" [column 4, lines 37-43]. Thus *Christie* teaches performing a conversion prior to a higher level (level 3 or the user part level 4 shown in figure 5). Specifically, *Christie* teaches converting (i.e., overwriting) a new OPC, DPC, and/or CIC (e.g., see column 8, lines 21-42). Although the OPC, DPC, and/or CIC can also be modified by the user layer (e.g., see column 9, lines 23-46), the reference teaches that this information is modified by the point code conversion 500 (i.e., a "virtual signaling system" for certain instances. Specifically, figure 5 shows that the routing information (i.e., point codes) is modified before the packet is routed at level 3.

Christie may be silent or deficient to the further limitation of overwriting a control filed with a value from a restricted subset of the plurality of possible values according to subrouting. Examiner notes that it would have been obvious to one skilled in the art prior to applicant's invention to overwriting a control field with a value from a restricted subset of the plurality of possible values. One motivation would be to overwrite values for security. As such *Weisser* helps cure the above-cited deficiency by

disclosing that values are overwritten for security (i.e., unauthorized access) (e.g., see page 15, second paragraph). *Weisser*, however, is silent or deficient to where the functionality takes places (e.g., at level 2 or level 3). As taught by *Christie* these comparisons are performed prior to level 3 using the point code conversion block 500 (i.e., converting is analogous to overwriting).

As to **claims 3, 9 and 16**, see e.g., figure 5 of *Christie*.

As to **claim 4 and 10**, see e.g., column 8, lines 20-42 of *Christie*.

As to **claim 11**, see the same reasoning behind the rejection to claim 10.

As to **claims 5, 6, 7 and 12**, see e.g., column 1, lines 15-32 of *Christie*.

As to **claim 17**, see the same reasoning behind the rejection for claim 15.

Conclusion

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Derrick W. Ferris whose telephone number is (703) 305-4225. The examiner can normally be reached on M-F 9 A.M. - 4:30 P.M. E.S.T.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (703) 308-5340. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 305-3900.

Derrick W. Ferris
Examiner
Art Unit 2663

DWF


CHI PHAM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600 12/08/03